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54 Compressed prefix matching database searching.

17 Aspects of the invention include a method of conducting a reduced length search along a search path. A node which would otherwise occur between a previous and a following node in the search path is eliminated, and information is stored as to whether, had said eliminated node been present, the search would have proceeded to the following node. During the search, a search argument is compared with the stored information, and the search effectively progresses from the previous node directly to the following node if the comparison is positive. In preferred embodiments, some nodes provide result values for the search, and a node is eliminated only if its presence would not affect the result value for the search. In another aspect, the invention features a method of conducting a two mode search of reduced length. For a first mode of the search, nodes along a search path are provided, at least some of the nodes including one or more pointers pointing to other nodes. A search argument comprising a series of search segments is provided, and some values of segments of the argument corresponding to nodes along the search path, some other values of the segments relating to a second mode of the search. Indicators associated with nodes are provided, each indicator indicating the segments corresponding to the second

mode. The search path is searched by processing successive search segments by inspecting the indicator associated with each node, and proceeding to the second search mode if the indicator indicates that the segment relates to the second mode.

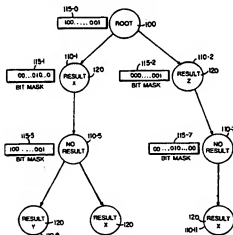


FIG.5



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EUROPEAN SEARCH REPORT

Application Number

EP 90 30 6281

DOCUMENTS CONSIDERED TO BE RELEVANT

| Category | Citation of document with indication, where appropriate, of relevant passages | Relevant to claim | CLASSIFICATION OF THE APPLICATION (Int. Cl.5) |
|--|--|--|---|
| A | IEE PROCEEDINGS vol. 135, no. 1/E, January 1988, STEVENAGE, GB pages 55 - 59 P. WOLSTENHOLME : 'Filtering of network addresses in real time by sequential decoding' " the whole document " | 1,10,12, 17,23, 25,26, 28,30,34 | G06F15/419 |
| A | FUTURE GENERATIONS COMPUTER SYSTEMS vol. 4, no. 2, September 1988, AMSTERDAM NL pages 81 - 93 J.J. GARCIA-LUNA-ACEVES : 'Routing Management in Very Large-Scale Networks' " page 84, column 1, line 22 - page 87, column 2, line 17 " | 1,10,12, 17,23, 25,26, 28,31,34 | |
| X | ACM TRANSACTIONS ON DATABASE SYSTEMS vol. 14, no. 1, March 1989, NEW YORK US pages 41 - 74 R. RAMESH ET AL : 'Variable-Depth Trie Index Optimization : Theory and Experimental Results' " page 42, line 1 - page 43, line 1; figure 1 " | 17,23, 31,34 | TECHNICAL FIELDS SEARCHED (Int. Cl.5) |
| | | | G06F |
| The present search report has been drawn up for all claims | | | |

Place of search
THE HAGUE

Date of completion of the search
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CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
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Δ : member of the same patent family, corresponding document